

REMARKS

Claims 1-9 and 11-22 are pending. Claims 23-30 have been withdrawn as being directed to a non-elected invention, Claims 10 has been cancelled. Claims 1-9 and 11-22 are currently under examination in the present application. All of the claims under examination stand rejected. Claim 1 is amended herewith. Support for this amendment can be found throughout the specification. Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and the following remarks.

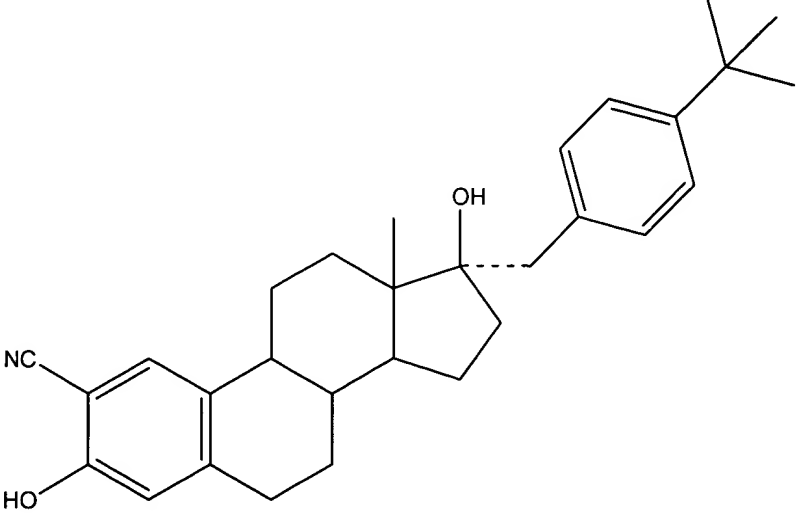
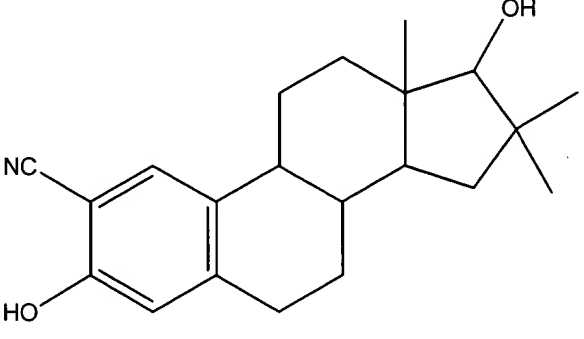
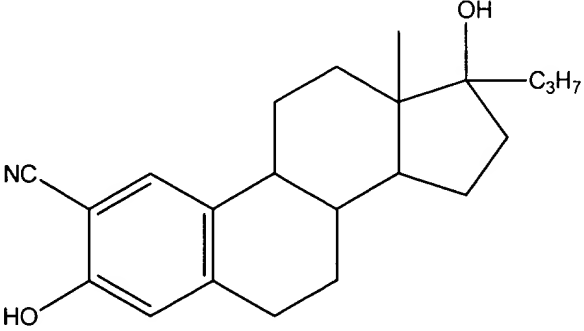
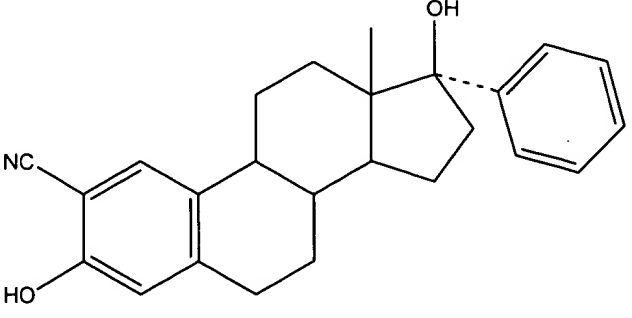
The Office Action

Claims 1-9 and 11-21 were rejected under 35 U.S.C. § 102(b) as being completely anticipated by the published Canadian Patent Application (GB 2339368) (hereinafter “CA ‘368”). Applicants respectfully traverse the foregoing rejection.

The Rejection Under 35 U.S.C. §102(a)

Claims 1-9 and 11-21 were rejected under 35 U.S.C. §102(b) as being completely anticipated by CA ‘2339368 to Labrie et al.. The rejection states that Compound No. EM on page 121 of Labrie et al. anticipates the claimed invention where Rh1 and Rh2 are methyl groups, Ra is a CN group, R₀ and R_b are hydrogen, and R_g is OH. Applicants respectfully traverse this rejection.

The EM compounds on page 121 of Labrie et al. have the following structures:

EM-2359	
EM-1926	
EM-2132	
EM-2318	

All of the foregoing EM compounds require substitution at the 2-position with a CN group. In the present application, applicants have amended Claim 1 such that Ra is not –CN. In the other independent claim; *i.e.*, Claim 11, Ra is always –OR.

In order for a reference to anticipate a claim the reference must disclose each and every limitation of the claim. Since none of Claims 1-9 and 11-30 include the limitation that Ra is –CN, Labrie et al. does not disclose each and every limitation of those claims. Therefore, none of the EM compounds from page 121 of Labrie et al. anticipate Claim 1-9 and 11-30. Accordingly, applicants respectfully submit that the rejection of Claims 1-9 and 11-30 under 35 U.S.C. §102 is improper and should be withdrawn.

Although the Office Action does not contain a rejection under 35 U.S.C. §103, applicants submit that Claims 1-9 and 11-30 would not be obvious in view of Labrie et al. None of the possible groups for Ra in Claims 1 and 11 are homologues of –CN. Therefore, applicants respectfully submit that Claims 1-9 and 11-30 would not be obvious in view of Labrie et al.

Furthermore, Section 2144.09 of the MPEP discusses the subject of structural similarity between chemicals. Although the present claims do not involve homologues, the MPEP makes it clear that even if compounds are homologous, homology should not be automatically equated with prima facie obviousness because the claimed invention and the prior art must each be viewed “as a whole.” MPEP §2144.09. Thus, it would be erroneous for the examiner to contend that the present claims are *prima facie* obvious merely because of alleged homology or structural similarity. The examiner must consider the claimed invention and the prior art as a whole in making a determination of alleged obviousness. Thus, the problem of deactivation discovered by applicants and the solution of that problem by substituting estradiols at both the 2- and the 16-position to provide bulk hindrance to deactivation mechanisms must also be considered.

To illustrate how the claimed invention and the prior art must be considered as a whole, the MPEP discusses the case of *In re Langer*, 465 F.2d 896 (CCPA 1972). The MPEP states, "Claims to a polymerization process using a sterically hindered amine were held unobvious over a similar prior art process because the prior art disclosed a large number of unhindered amines and only one sterically hindered amine (which differed from the claimed amine by 3 carbon atoms), and therefore the reference as a whole did not apprise the ordinary artisan of the significance of hindered amines as a class.)." MPEP §2144.09.

The same principal of law is applicable in the present case. In the present case the prior art does not disclose sterically hindering degradation of the hydroxyl group substituted at the 17-position by using bulk-hindering substituents substituted at the 16-position. Although Labrie et al. discloses substitution at the 16-position, there is no disclosure that it is to preserve anti-angiogenic activity. In fact, Labrie et al. does not disclose that its compounds have any anti-angiogenic activity. Rather, Labrie et al. discloses that its compounds have are inhibitors of enzymes involved in the biosynthesis of sex steroids from natural precursors; in particular, inhibitors that reduce the natural production of androgens, such as testosterone and dihydrotestosterone. Therefore, the prior art fails to teach the concept of using bulk hindrance at the 16-position to protect against anti-angiogenic deactivation of the claimed estradiol derivatives.

Furthermore, the properties of the steroidal molecules at issue here are unpredictable based upon structural similarity. For example, 2-methoxy estradiol is anti-angiogenic and is useful for treating diseases such as cancer; whereas, 4-methoxy estradiol is a known carcinogen and would not be useful for treating cancer or any other disease in a human. Thus, the mere shift of the methoxy group from the 2-position to the 4-position significantly changes the properties of the estradiol derivative, and, therefore, illustrates the unpredictability

of the properties of this molecule based upon structural similarity.

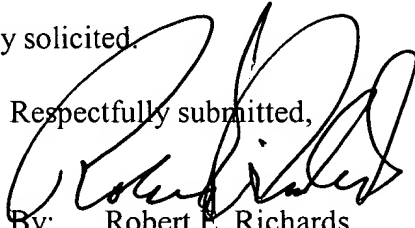
The MPEP states that, "The presumption of obviousness based on a reference disclosing structurally similar compounds may be overcome where there is evidence showing there is no reasonable expectation of similar properties in structurally similar compounds. *In re May*, 574 F.2d 1082, 197 USPQ 601 (CCPA 1978) (appellant produced sufficient evidence to establish a substantial degree of unpredictability in the pertinent art area, and thereby rebutted the presumption that structurally similar compounds have similar properties)." MPEP §2144.09. Applicants submit that the foregoing showing of unpredictability overcomes any alleged *prima facie* obviousness of the presently claimed compounds.

Considering the prior art and the claimed invention as a whole dictates a finding of nonobviousness of the presently claimed invention. Therefore, claims 1-9 and 11-30 are not obvious under 35 U.S.C. § 103 in view of Labrie et al.

Conclusion

In view of the foregoing remarks, Applicants respectfully maintain that Claims 1-9 and 11-30 are in condition for allowance. Such action is respectfully requested. If there are informalities remaining in the application which may be corrected by Examiner's Amendment, or there are any other issues which can be resolved by telephone interview, a telephone call to the undersigned attorney at 404-745-2408 is respectfully solicited.

Respectfully submitted,

By: 
Robert E. Richards
Reg. No. 29,105

KILPATRICK STOCKTON LLP
1100 Peachtree Street, NE, Suite 2800
Atlanta, GA 30309-4530
Telephone 404.815.6500
Docket No. 05213-0731 (43170-253406)